Exxon Mobil Corporation
5000 Bayway Drive
Baytown, TX 77520

ExxonMobil

February 22, 2022

Director, Air Enforcement Division
Office of Civil Enforcement
U.S. Environmental Protection Agency
Mail Code 2242-A
1200 Pennsylvania Ave., N.W.
William Jefferson Clinton Building
Room 1119
Washington, D.C. 20460-0001

Associate Director
Air, Toxics, and Inspections Coordination Branch (6 EN-A)
U.S. EPA, Region 6
1201 Elm Street, Suite 500
Dallas, Texas 75270

RE: Consent Decree, *United States vs. Exxon Mobil Corp.*, Civil Action No. 4:17-cv-3302 (S.D. Tex.), Semi-Annual Reporting Requirements - ExxonMobil Baytown Chemical Plant

To Whom It May Concern:

Pursuant to Section IX, Paragraphs 66-73 of above referenced Consent Decree, Exxon Mobil Corporation (ExxonMobil) submits this Semi-Annual Report (SAR) covering the period of July 1, 2021 through December 31, 2021.

Certification Statement
Per Consent Decree Paragraph 71:

I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

If you have any questions about this SAR or require any additional information, please contact Kelly E. Davis at 346-259-6014 or kelly.e.davis@exxonmobil.com.

Sincerely,

Wim Blokker
Baytown Chemical Plant Manager
ExxonMobil Baytown Chemical Plant

Attachment

cc: EES Case Management Unit
Environment and Natural Resources Division
U.S. Department of Justice
P.O. Box 7611
Washington, D.C. 20044-7611
Re: DJ # 90-5-2-1-10128 and 10128/1

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ExxonMobil

Baytown Chemical Plant

Baytown, Texas

SEMI-ANNUAL REPORT
PURSUANT TO CONSENT DECREE,
UNITED STATES, ET AL V. EXXON MOBIL CORPORATION AND EXXONMOBIL OIL CORPORATION,
CIVIL ACTION NO. 4:17-cv-3302 (S.D. TX)

July 1, 2021 – December 31, 2021

5000 Bayway Drive

Baytown, Texas

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SECTION 1 STATUS OF CONSENT DECREE SECTION V COMPLIANCE REQUIREMENTS

This progress report provides the status of implementation of Consent Decree requirements that, during the reporting period, require the ExxonMobil Baytown Chemical Plant to undertake a specific action or make a submittal to an agency; or otherwise require the ExxonMobil Baytown Chemical Plant to take specific steps to implement new obligations, including new control or emissions requirements, new monitoring requirements, or institution of new procedures. Once the ExxonMobil Baytown Chemical Plant has reported a requirement as implemented, it will not appear in subsequent progress reports under this subparagraph.

Consent Decree Paragraph 66a. – b.

a. A description of the status of work performed and progress made toward implementing all requirements of Consent Decree Section V (Compliance Requirements) at the Covered Facilities. This topic should describe any major milestones completed and remaining to be completed;

There is no remaining work to be completed by ExxonMobil Baytown Chemical Plant to meet the requirements of Consent Decree Section V Compliance Requirements, as noted by "None" in Table 1.1.

TABLE 1.1 Major Milestones Completed For This Reporting Period

Applicability	Description of Work Completed During This Reporting Period	Completion Date
None	None	None

ExxonMobil Baytown Chemical Plant does not have any remaining work required to meet the Consent Decree Section V Compliance Requirements, as noted by "None" in Table 1.2.

TABLE 1.2 Status of Remaining Work to be Completed

Applicability	Remaining Work To Be Completed	Anticipated Completion Date
None	None	None

b. A description of any problems encountered or anticipated in meeting the requirements in Consent Decree Section V (Compliance Requirements) at the Covered Facilities, together with implemented or proposed solutions;

ExxonMobil Baytown Chemical Plant has not encountered nor does it anticipate problems in meeting the requirements of Consent Decree Section V Compliance Requirements as indicated by "None" in Table 1.3.

TABLE 1.3 Encountered or Anticipated Problems In Work To be Completed

Covered Flare	Encountered or Anticipated Problem(s)	Proposed or Implemented Solution(s)
None	None	None

SECTION 2 STATUS OF CONSENT DECREE SECTION V REPORTING REQUIREMENTS

Below is a summary of the status of reports as required under Consent Decree Section V.

Flare Data and Monitoring Systems and Protocol Report
Requirement: CD Paragraph 18
Description: For each Covered Flare, by no later than 365 Days after the Effective Date, the Defendants must submit a report, consistent with the requirements in Appendix 1.5, to EPA that includes the following:

a. The information, diagrams, and drawings specified in Paragraphs 1–7 of Appendix 1.5;
b. A detailed description of each instrument and piece of monitoring equipment, including the specific model and manufacturer, that the Defendants have installed or will install in compliance with Paragraphs 20–24 of this Consent Decree (Paragraphs 8–9 of Appendix 1.5); and
c. A narrative description of the monitoring methods and calculations that the Defendants will use to comply with the requirements of Paragraph 43 (Paragraph 10 of Appendix 1.5).

Status: The Flare Data and Monitoring Systems and Protocol Report was submitted on June 6, 2019.

Initial Waste Gas Minimization Plan ("Initial WGMP")
Requirement: CD Paragraph 29
Description: By no later than 365 Days after the Effective Date, for each Covered Flare, the Defendants must submit to EPA an Initial Waste Gas Minimization Plan that discusses and evaluates flaring Prevention Measures on both a facility-wide and Covered Flare-specific basis for each Covered Facility.

Status: The Initial Waste Gas Minimization Plan was submitted on June 6, 2019.

First Updated Waste Gas Minimization Plan ("First Updated WGMP")
Requirement: CD Paragraph 29
Description: By no later than 730 Days after the Effective Date, the Defendants must submit to EPA a First Updated WGMP that updates, if and as necessary, the information, diagrams, and drawings required in the Flare Data and Monitoring Systems and Protocol Report required by Paragraph 18 and the information required in sub-Paragraphs 29.a–29.e for the 12-month period after the period covered by the Initial Waste Gas Minimization Plan.

Status: The first Updated Waste Gas Minimization Plan was submitted on June 5, 2020.

SECTION 3 STATUS OF PERMITTING ACTIVITY

Consent Decree Paragraph 66c.

c. A description of the status of any permit applications, including a summary of all permitting activity, pertaining to compliance with this Consent Decree;

Status: ExxonMobil Baytown Chemical Plant submitted permit applications to TCEQ's Air Permits Division for Permit Number 20211/PAL16 and Permit Number 4600 on May 17, 2019. The altered permits were issued September 16, 2019, and incorporated the requirements listed in the Consent Decree sub-Paragraph 60.c such that the requirements (i) become and remain "applicable requirements" as that term is defined in 40 C.F.R. §70.2 and (ii) survive the termination of the Consent Decree.

ExxonMobil Baytown Chemical Plant submitted a permit application to TCEQ's Air Permits Division for Title V Permit O2269 on January 2, 2020 to incorporate the requirements listed in the Consent Decree sub-Paragraph 60.c into Title V Permit O2269 through incorporation of Permit Number 20211/PAL16 and Permit Number 4600 issued September 16, 2019. In accordance with Consent Decree sub-Paragraph 60.b., the permit application was submitted no later than three years after the Effective Date or one year after the respective deadline for the Compliance Requirements listed in sub-Paragraph 60.c. TCEQ issued Title V Permit O2269 to ExxonMobil Baytown Chemical Plant on August 3, 2020.

SECTION 4 REPORTS SUBMITTED TO LDEQ

Consent Decree Paragraph 66d.

d. A copy of any reports that were submitted only to LDEQ and that pertain to compliance with this Consent Decree.

Status: This section does not apply because the ExxonMobil Baytown Chemical Plant is located in the State of Texas and therefore does not submit reports to LDEQ.

Consent Decree Paragraph 66e.

e. A description of the Defendants' progress in satisfying its obligations in connection with the SEP(s) under Section VI including, at a minimum, a narrative description of activities undertaken; status of any construction or compliance measures, including the completion of any milestones set forth in the SEP Work Plan (attached as Appendix 2.1), and a summary of costs incurred since the previous report;

Status: The Louisiana Beneficial Environmental Projects (BEPs) have been completed. Refer to the 2H2019 Semi-Annual Report submitted by the ExxonMobil Baton Rouge Chemical Plant on February 26, 2020 for supporting information and documentation.

The Baytown Area Phyto-Pollution Reduction Supplemental Environmental Project (SEP) has been completed. Refer to the 2H2020 Semi-Annual Report submitted by the ExxonMobil Baytown Chemical Plant on February 25, 2021. As of the date of this report, a total of eighty eight (88) trees have been found to be in need of replacement and have been or will be replaced under warranty.

SECTION 6 UPDATED WASTE GAS MINIMIZATION PLAN (WGMP)

Consent Decree Paragraph 66f.

f. Any updated WGMP for the Covered Facilities that is required to be submitted by Paragraph 31.

Subsequent Updates to WGMPs ("Subsequently Updated WGMP")
Requirement: CD Paragraph 31
On an annual basis after submitting the First Updated WGMP until termination of the Decree, the Defendants must submit an updated WGMP for a Covered Facility as part of the Semi-Annual Report required by Section IX (Reporting Requirements) if, at that Covered Facility, the Defendants: a) commence operation of a Newly Installed Covered Flare or permanently remove a Covered Flare from service, b) connect a new Waste Gas stream to a Covered Flare, c) intentionally modify the Baseload Waste Gas Flow Rate to a Covered Flare, d) install additional FGRS, or e) change the design of a Covered Flare. Each update must update, if and as necessary, the information required in sub-Paragraphs 29.a.i - 29.a.iii. Each update must update, if and as necessary, the information required in sub-Paragraphs 30.a and 30.b. To the extent the Defendants propose to extend any schedule set forth in a previous WGMP for any of the Covered Facilities, the Defendants may do so only with good cause, the determination of which is subject to Section XII (Dispute Resolution).

Status: The Initial Waste Gas Minimization Plan was submitted on June 6, 2019. The first Updated Waste Gas Minimization Plan was submitted on June 5, 2020. Subsequent updates, if necessary, will be made on an annual basis as part of the Semi-Annual Report.

SECTION 7 SUMMARY OF INTERNAL FLARING INCIDENT REPORTS

Consent Decree Paragraph 66g.

g. Any summary of internal flaring incident reports as required by Paragraph 34.

Submitting Summary of Internal Flaring Incident Reports
Requirement: CD Paragraph 34b.
In each Semi-Annual Report due under Section IX (Reporting Requirements), the Defendants must include a summary of the following items for each Reportable Flaring Incident that occurred during the six-month period that the Semi-Annual Report covers:

i. Date;
ii. Duration;
iii. Amount of VOCs and HAPs emitted;
iv. Root cause(s);
v. Corrective action(s) completed;
vi. Corrective action(s) still outstanding; and
vii. An analysis of any trends identified by the Defendants in the number of Reportable Flaring Incidents, the root causes, or the types of corrective action(s).

Status: In accordance with Paragraph 34a. of the Consent Decree, ExxonMobil Baytown Chemical Plant began monitoring for Reportable Flaring Incidents (RFIs) on June 6, 2019. A summary of RFIs that occurred from July 1, 2021 through December 31, 2021 are provided in Table 7.1.

TABLE 7.1 July 1 – December 31, 2021 Summary of Internal Flaring Incident Reports

Date	Duration, *Hours*	Amount Emitted	
		VOCs, *lbs*	HAPs, *lbs*
7/19/21 16:57 – 7/20/21 04:05	11.1	2,170	0
Covered Flare(s)	Flare Stack 9, Flare Stack 23, Flare Stack 24		
Root Cause	A reactor circulation pump (P-4710) at Baytown Polypropylene Plant Line 4 experienced an electrical trip, causing an automated sequence to isolate this reactor (R-4710) from downstream reactors and safely route material to the flare system. An investigation of the RFI was conducted but was unable to definitively determine the root cause of the incident. However, based on available information, the root cause of the P-4710 shutdown is thought to be an electrical trip caused by a thunderstorm in the area.		
Corrective Action(s) Completed	Replaced P-4710 with a Spare Pump and Motor Replaced PSV PO-4401 with a Spare PSV Replaced 4RH402 (R-4710 Isolation Valve) Added alarm to indicate flow reversal between R-4710 and R-4711		
Corrective Action(s) Still Outstanding	None		

Date	Duration, *Hours*	Amount Emitted	
		VOCs, *lbs*	HAPs, *lbs*
12/18/2021 3:59 – 12/18/2021 10:29	6.5	2,310	0
Covered Flare(s)	Flare Stack 9, Flare Stack 23, Flare Stack 24		
Root Cause	The Baytown Polypropylene Plant Line 8 high pressure separator experienced plugging during a start-up attempt following a planned downtime, resulting in a full unit shutdown. Calibration of a new nuclear level instrument during the planned downtime likely left granules in the high pressure separator and caused it to plug.		
Corrective Action(s) Completed	Modified guidance for nuclear level instrument calibration		
Corrective Action(s) Still Outstanding	None		

Paragraph 34.b.vii. of the Consent Decree requires an analysis of any trends identified in the number of Reportable Flaring Incidents, the root causes, or the types of corrective actions(s).

Status: ExxonMobil Baytown Chemical Plant did not identify trends in the number of RFIs, the root causes, or the types of corrective action(s).

Consent Decree Paragraph 66h.

h. A summary of the following, per Covered Flare per Calendar Quarter (hours shall be rounded to the nearest tenth):

(1) The total number of hours of Instrument Downtime claimed pursuant to Paragraph 45, expressed as both an absolute number and a percentage of time the Covered Flare that the instrument/equipment monitors is In Operation and Capable of Receiving Sweep, Supplemental, and/or Waste Gas;

TABLE 8.1 3rd Quarter 2021 Instrument Downtime Summary

Covered Flare	Monitoring System	System Downtime (%)	System Downtime (hours)
FS-9	Vent Gas Flow	1.1	25.0
FS-9	Steam Flow	0.0	0.5
FS-9	Net Heating Value	0.3	5.8
FS-9	Camera	0.2	5.2
FS-12	Vent Gas Flow	0.0	0.0
FS-12	Steam Flow	0.0	0.0
FS-12	Net Heating Value	0.5	11.5
FS-12	Camera	0.0	0.0
FS-23	Vent Gas Flow	0.0	0.0
FS-23	Steam Flow	0.0	0.0
FS-23	Net Heating Value	0.1	1.8
FS-23	Camera	0.2	4.7
FS-24	Vent Gas Flow	0.0	0.0
FS-24	Steam Flow	0.0	0.0
FS-24	Net Heating Value	0.0	0.3
FS-24	Camera	0.0	0.1

TABLE 8.2 4th Quarter 2021 Instrument Downtime Summary

Covered Flare	Monitoring System	System Downtime (%)	System Downtime (hours)
FS-9	Vent Gas Flow	0.2	5.5
FS-9	Steam Flow	0.0	1.0
FS-9	Net Heating Value	0.1	1.5
FS-9	Camera	0.2	5.1
FS-12	Vent Gas Flow	0.0	0.3
FS-12	Steam Flow	0.0	0.0
FS-12	Net Heating Value	2.3	51.5
FS-12	Camera	0.0	0.2
FS-23	Vent Gas Flow	0.3	5.3
FS-23	Steam Flow	0.0	0.0
FS-23	Net Heating Value	0.6	12.3
FS-23	Camera	0.0	0.0
FS-24	Vent Gas Flow	0.1	1.5
FS-24	Steam Flow	0.0	0.0
FS-24	Net Heating Value	4.4	97.5
FS-24	Camera	0.0	0.2

(2) If the total number of hours of Instrument Downtime claimed pursuant to Paragraph 45 exceeds 5% of the time in a Calendar Quarter the Covered Flare affected by the downtime is In Operation, an identification of the periods of downtime by date, time, cause (including Malfunction or maintenance), and, if the cause is asserted to be a Malfunction, the corrective action taken;

Status: No Covered Flare incurred Instrument Downtime claimed pursuant to Paragraph 45 that exceeded 5% of the time the Flare was In Operation in any Calendar Quarter, as noted by "None" in Tables 8.3 – 8.4.

TABLE 8.3 3rd Quarter 2021 Instrument Downtime Identification (if total hours exceeds 5%)

Covered Flare	Monitoring System	Start Date/Time	End Date/Time	Cause	Corrective Action
None	None	None	None	None	None

TABLE 8.4 4th Quarter 2021 Instrument Downtime Identification (if total hours exceeds 5%)

Covered Flare	Monitoring System	Start Date/Time	End Date/Time	Cause	Corrective Action
None	None	None	None	None	None

(3) The total number of hours, expressed as both an absolute number of hours and a percentage of time that the Covered Flare was In Operation, in which the requirements of Paragraphs 43-44 were not applicable because the only gas or gases being vented were Pilot Gas or Purge Gas;

TABLE 8.5 3rd Quarter 2021 Requirements of Paragraphs 43-44 Were Not Applicable Because Only Pilot or Purge Gas Flow

Covered Flare	Time (%)	Time (Hours)
FS-9	97.9	2,161.3
FS-12	0.0	0.0
FS-23	0.0	0.0
FS-24	99.9	2,205.4

TABLE 8.6 4th Quarter 2021 Requirements of Paragraphs 43-44 Were Not Applicable Because Only Pilot or Purge Gas Flow

Covered Flare	Time (%)	Time (Hours)
FS-9	81.0	1,789.1
FS-12	0.0	0.1
FS-23	5.0	103.9
FS-24	96.2	2,123.4

(4) Exceedances of Combustion Efficiency Standards.

i. The total number of hours, expressed as both an absolute number of hours and a percentage of time the Covered Flare was In Operation, of exceedances of the emissions standards in Paragraphs 43-44; provided however, that if the exceedance of these standards was less than 5% of the time in a Calendar Quarter and was due to one or more of the exceptions set forth in Paragraph 45, the report shall so note; and

Status: No exceedance of combustion efficiency standards was due to one or more of the exceptions set forth in Paragraph 45, as noted by "None" in Tables 8.7 – 8.8.

TABLE 8.7 3rd Quarter 2021 Exceedance of Paragraph 43-44 Standards

Covered Flare	Total Exceedance of Emissions Standards		Subset of Exceedances Less Than 5% of the Time in Calendar Quarter and Due to One of the Exceptions Set Forth in Paragraph 45	
	Time (%)	Time (Hours)	Time (%)	Time (Hours)
FS-9	0.0	0.0	None	None
FS-12	0.0	0.0	None	None
FS-23	0.0	0.0	None	None
FS-24	0.0	0.0	None	None

TABLE 8.8 4th Quarter 2021 Exceedance of Paragraph 43-44 Standards

Covered Flare	Total Exceedance of Emissions Standards		Subset of Exceedances Less Than 5% of the Time in Calendar Quarter and Due to One of the Exceptions Set Forth in Paragraph 45	
	Time (%)	Time (Hours)	Time (%)	Time (Hours)
FS-9	0.0	0.0	None	None
FS-12	0.0	0.0	None	None
FS-23	0.0	0.0	None	None
FS-24	0.0	0.0	None	None

ii. If the exceedance of the emissions standards in Paragraphs 43-44 was not due to one of the exceptions in Paragraph 45 (Instrument Downtime), or if the exceedance was due to one or more of the exceptions in Paragraph 45 and the total number of hours caused by the exceptions exceeds 5% of the time in a Calendar Quarter that the Covered Flare affected by the Instrument Downtime was In Operation, an identification of each block period that exceeded the standard, by time and date; the cause of the exceedance (including startup, shutdown, maintenance, or Malfunction), and if the cause is asserted to be a Malfunction, an explanation and any corrective actions taken; and

Status: No exceedance of combustion efficiency standards, not due to one of the exceptions set forth in Paragraph 45, as noted by "None" in Tables 8.9 – 8.10.

TABLE 8.9 3rd Quarter 2021 Exceedance of Combustion Efficiency Standards

Covered Flare	Combustion Efficiency Standard	Start Date/ Time	End Date/ Time	Cause	Corrective Action
None	None	None	None	None	None

TABLE 8.10 4th Quarter 2021 Exceedance of Combustion Efficiency Standards

Covered Flare	Combustion Efficiency Standard	Start Date/ Time	End Date/ Time	Cause	Corrective Action
None	None	None	None	None	None

(5) Compliance with Compressor Availability Requirements. Sufficient information to document compliance with the FGRS Compressor availability requirements of sub-Paragraph 38.b. For any period of non-compliance, the Defendants must identify the date, cause, and corrective action taken.

Requirements Related to Compressors Being Available for Operation
Requirement: CD Paragraph 38b.iii.

iii. Baytown Chemical Plant FGRS Operation and Availability.
The Baytown Chemical Plant FGRS must have two Compressors Available for Operation or in operation 100% of the time, three Compressors Available for Operation or in operation 95% of the time, and four Compressors Available for Operation or in operation 90% of the time. The periods provided for in sub-Paragraphs 38.c. and 38.d. below may be included in the amount of time that a Compressor is Available for Operation when determining compliance with the requirement to have a Compressor Available for Operation or in operation.

Status: ExxonMobil Baytown Chemical Plant's Flare Gas Recovery System (FGRS) includes five Compressors that support Covered Flares FS-9, FS-23, and FS-24. These Compressors are C-604A, C-604B, C-4755, C-8755, and C-506. Sub-paragraph 38.b.iii. requires the ExxonMobil Baytown Chemical Plant FGRS to have two Compressors Available for Operation or in operation 100% of the time, three Compressors Available for Operation or in operation 95% of the time, and four Compressors Available for Operation or in operation 90% of the time. The 8,760-hour rolling sum, rolled hourly, began June 6, 2018 for this existing FGRS. The FGRS Compressor availability calculations, using the methodology provided in CD Paragraph 38.f. "Period to be Used for Computing Percentage of Time", demonstrated that the FGRS met the availability requirements, as shown in Table 8.11.

TABLE 8.11 FGRS Operation and Availability

Covered Flare(s)	FGRS Compressor Count	Actual Minimum Availability (%)[1]	Required Minimum Availability (%)
FS-9, FS-23, and FS-24	2	100	100
	3	95	95
	4	92	90

[1] The Actual Minimum Availability provided is the minimum percentage of time that the Baytown Chemical Plant had the listed number of FGRS Compressors Available for Operation or in operation from July 1, 2021 through December 31, 2021, using the 8,760-hour rolling sum, rolled hourly, as prescribed in CD Paragraph 38.f (i.e., the rolling sum included only the previous 8,760 1-hour periods when Potentially Recoverable Gas was generated during all or part of the hour, provided that the Potentially Recoverable Gas was not generated by flows that could not have been prevented through reasonable planning and were in anticipation of or caused by a natural disaster, act of war or terrorism, or External Utility Loss).

Requirements Related to Compressors Being Available for Operation

Requirement: CD Paragraph 38c.

c. Maintenance of FGRS. Periods of maintenance on and subsequent restart of the Compressor(s) may be included in the amount of time that a Compressor is Available for Operation when determining compliance with the requirement to have a Compressor Available for Operation or in operation; provided however, these periods must not exceed 1,344 hours per Compressor in a five-year rolling sum period, rolled daily. The Defendants must use best efforts to schedule maintenance activities during a turnaround of the process units venting to the Covered Flare(s) served by the applicable FGRS. To the extent it is not practicable to undertake these maintenance activities during a turnaround of these units, the Defendants must use best efforts to minimize the generation of Waste Gas during such periods.

Status: Periods of maintenance on and subsequent restart of the Compressor(s) included in the amount of time that a Compressor is Available for Operation is provided in Table 8.12. These periods do not exceed the 1,344 hours per Compressor in a five-year rolling sum period, rolled daily.

TABLE 8.12 Periods of Maintenance Included in FGRS Operation and Availability

Covered Flare(s)	FGRS Compressor	Date	Hours	Five-year Rolling Sum (hours)
FS-9, FS-23, and FS-24	C-604A	None	None	0
	C-604B	None	None	0
	C-4755	None	None	0
	C-8755	None	None	0
	C-506	None	None	0

Requirements Related to Compressors Being Available for Operation – FGRS Shut Down
Requirement: CD Paragraph 38d.
d. FGRS Shut Down. Periods in which the FGRS is shut down (including the subsequent restart) due to operating conditions (such as high temperatures or large quantities of entrained liquid in the Vent Gas) outside the design operating range of the FGRS, including the associated knock-out drum(s), such that the outage is necessary for safety or to preserve the mechanical integrity of the FGRS may be included in the amount of time that a Compressor is Available for Operation when determining compliance with the requirement to have the Compressor Available for Operation or in operation. By no later than 45 Days after any such outage, the Defendants must investigate the root cause and all contributing causes of the outage and must implement, as expeditiously as practicable, corrective action, if any, to prevent a recurrence of the cause(s). In the reports due under Section IX (Reporting Requirements) of this Decree, the Defendants must describe each outage that occurred under the conditions identified in this sub-Paragraph, including the date, duration, cause(s), corrective action, and the status of the implementation of corrective action.

Status: There were no periods when the FGRS was shut down and/or restarted due to operating conditions outside the design operating range of the FGRS that were also included in FGRS availability as allowed under CD Paragraph 38.d, as noted by "None" in Table 8.13.

TABLE 8.13 FGRS Outages Included in FGRS Availability
July 1, 2021 – December 31, 2021

Covered Flare(s)	FGRS Compressor	Outage Start Date	Duration (hours)	Cause(s)	Corrective Action(s) and Status
None	None	None	None	None	None

Status: As per Consent Decree Paragraph 66h(5), there were no periods of FGRS non-compliance, as noted by "None" in Table. 8.14.

TABLE 8.14 FGRS Non-Compliance July 1, 2021 – December 31, 2021

Covered Flare(s)	FGRS Compressor	Start Date	Cause(s)	Corrective Action(s)
None	None	None	None	None

SECTION 9 ADDITIONAL MATTERS

Consent Decree Paragraph 66i.

i. Any additional matters that the Defendants believe should be brought to the attention of EPA, or LDEQ for the Baton Rouge Facilities.

Status: ExxonMobil Baytown Chemical Plant submitted a "Request for Termination" on October 28, 2021.

SECTION 10 FENCELINE AIR MONITORING REPORTS

Consent Decree Paragraph 67 a. – b.

The Defendants must submit Fenceline Air Monitoring Reports as part of each Semi-Annual Report. The Fenceline Air Monitoring Reports must contain the following information:

a. In spreadsheet format, the individual sample results for each monitor comprising each Fenceline Monitoring System, each bi-weekly annual average benzene concentration difference value (once annual averages are available), and the corresponding meteorological data for the relevant monitoring periods. The first two columns of each spreadsheet shall be the date and time for each sample taken; and

b. A detailed description of the actions and findings of any root cause analysis and corrective action(s) undertaken pursuant to Paragraph 3(g) of Appendix 2.2, including the known results of the corrective action(s) and the anticipated emissions reductions (in TPY per pollutant).

Status: ExxonMobil Baytown Chemical Plant began collecting fenceline monitoring May 27, 2019 (retrieval June 10, 2019). The individual sample results for the samples that were collected between July 1, 2021 – December 31, 2021 and the corresponding meteorological data for the relevant monitoring periods are provided in Attachment A. The bi-weekly annual average benzene concentration difference value began once there were twenty six 14-Day sampling periods (retrieval of 26th sample on May 26, 2020).

ExxonMobil Baytown Chemical Plant has remained below the action level of 9 µg/m3 and thus, no root cause analyses or corrective actions pursuant to Paragraph 3(g) of Appendix 2.2 were undertaken during this reporting period.

SECTION 11 ANNUAL EMISSION DATA

Consent Decree Paragraph 68

In the Semi Annual Report that is submitted on February 28 of each year, the Defendants must provide, for each Covered Flare, for the prior calendar year, the amount of emissions of the following compounds (in tons per year): VOCs, HAPs, NOx, CO2, methane, and ethane.

Status: As of the date of this Semi-Annual Report, the annual emissions are reflected in Table 11.1 below.

TABLE 11.1 2021 Annual Emissions Data

Covered Flare	Emissions (tons per year)					
	VOCs	HAPs	NO_x	CO_2	Methane	Ethane
FS-9	8	< 1	2	4,024	10	< 1
FS-12	17	24	5	9,282	22	1
FS-23	118	14	20	38,986	58	9
FS-24	< 1	< 1	2	3,523	13	< 1

SECTION 12 ANY ADDITIONAL NON-COMPLIANCE

Consent Decree Paragraph 69

Each Semi-Annual Report must also include a description of any non-compliance with the requirements of this Consent Decree not otherwise identified by Paragraph 66 along with an explanation of the violation's likely cause and of the remedial steps taken, or to be taken, to prevent or minimize such violation. If the cause of a violation cannot be fully explained at the time the report is due, the Defendants must so state in the report. In such a case, the Defendants must investigate the cause of the violation and then submit an amendment to the report, including a full explanation of the cause of the violation, within 30 Days of the Day the Defendants become aware of the cause of the violation. Nothing in this Paragraph or the following Paragraph relieves the Defendants of their obligation to provide the notice required by Section XI (Force Majeure).

TABLE 12.1 Additional Non-Compliance

Covered Flare	Start Date/ Time	End Date/ Time	Cause	Corrective Action
FS-23	9/21/2021 08:05	9/21/2021 09:56	Intermittent Visible Emissions exceeded a total of 5 minutes during any 2 consecutive hours due to reduced steam control settings following completion of preventive maintenance.	Steam controls were adjusted.

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			Sampler Name	BTCX-01	BTCX-02	BTCX-02A	BTCX-03	BTCX-04	BTCX-05	BTCX-06	BTCX-06A	BTCX-06B	BTCX-07
			Sampler Latitude	29.70339	29.70313	29.70433	29.70702	29.71089	29.71590	29.72111	29.72330	29.72501	29.72675
			Sampler Longitude	-95.00562	-95.00983	-95.01415	-95.01595	-95.01861	-95.01886	-95.01701	-95.01915	-95.01985	-95.01993
Date of Retrieval	Time of Retrieval	Temperature (°C)	Barometric Pressure (hPA)	Benzene Sample Results (ug/m3)									
7/6/2021	13:58	27.5	1014.4	0.4	0.4	0.4	0.4	0.4	0.4	0.6	0.8	1.2	1.8
7/19/2021	14:36	27.4	1017.5	0.4	0.4	0.5	0.4	0.4	0.4	0.5	0.6	0.7	1.1
8/2/2021	15:04	29.7	1016.3	1.0	1.1	1.0	1.0	0.9	1.0	1.0	1.2	1.4	2.7
8/16/2021	15:28	29.2	1016.6	0.6	0.7	0.7	0.7	0.7	0.9	0.9	1.0	1.3	1.9
8/30/2021	15:45	28.9	1014.2	0.4	0.3	0.5	0.5	0.6	0.7	0.8	1.0	1.6	2.7
9/13/2021	14:44	27.9	1013.7	0.9	1.2	0.9	0.9	0.9	0.9	0.9	1.2	1.7	2.7
9/27/2021	19:20	24.6	1014.8	0.8	0.9	0.8	0.9	0.9	1.2	1.4	1.5	2.0	--[1]
10/11/2021	17:21	24.9	1014.9	0.9	1.0	0.9	0.9	0.8	0.9	1.2	1.7	2.4	3.5
10/25/2021	15:08	23.3	1016.4	0.6	0.7	0.7	0.8	0.7	0.8	0.9	1.1	1.5	1.8
11/8/2021	14:36	17.5	1017.7	1.0	1.0	0.9	1.1	1.0	1.7	1.7	3.6	3.7	7.2
11/22/2021	15:28	18.2	1020.9	0.7	0.8	0.7	0.9	0.7	0.8	1.2	1.5	2.3	3.4
12/6/2021	14:49	16.8	1020.4	0.8	0.9	0.9	1.0	1.0	0.9	1.3	1.4	1.6	3.9
12/20/2021	15:29	18.6	1018.4	0.6	0.7	0.6	0.9	0.7	0.7	1.0	1.0	2.2	2.6

Note
[1] *On September 27, 2021, the BTCX-07 sample tube was found missing (potentially related to Tropical Storm Nicholas).*

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	BTCX-08	BTCX-09	BTCX-09A	BTCX-10	BTCX-11	BTCX-11A	BTCX-12	BTCX-13	BTCX-14	BTCX-15	BTCX-16	BTCX-17	BTCX-18
	29.73200	29.73372	29.73829	29.74017	29.74530	29.74846	29.75231	29.75653	29.76039	29.76458	29.76753	29.76932	29.76562
	-95.0187	-95.02188	-95.02417	-95.02613	-95.02778	-95.02826	-95.02715	-95.02400	-95.02859	-95.02896	-95.02609	-95.02070	-95.01826
Date of Retrieval	Benzene Sample Results (ug/m3)												
7/6/2021	2.3	4.4	1.9	1.5	1.4	1.4	1.4	1.6	1.2	1.1	1.2	1.7	1.4
7/19/2021	2.4	2.0	1.8	1.3	1.2	1.3	1.4	2.0	1.2	1.0	1.0	1.6	1.8
8/2/2021	2.9	4.0	1.4	1.2	1.2	1.2	1.2	1.5	1.3	1.4	1.5	1.8	2.1
8/16/2021	3.3	3.1	2.2	1.9	1.6	1.6	1.4	2.0	1.2	1.0	1.0	1.3	1.3
8/30/2021	2.9	3.5	2.6	2.4	1.2	1.3	1.7	1.6	1.2	1.0	1.1	1.4	1.4
9/13/2021	2.7	14.5	2.7	2.7	2.1	1.7	1.6	1.6	1.6	1.4	1.4	1.5	1.7
9/27/2021	5.0	3.8	2.6	2.3	1.6	1.9	1.7	2.3	1.7	1.4	1.3	1.8	2.2
10/11/2021	4.0	2.6	2.4	1.8	1.4	1.4	1.4	3.7	1.8	1.9	2.1	1.9	2.0
10/25/2021	3.2	2.6	2.2	2.1	2.0	2.0	2.0	6.4	2.8	2.5	2.6	2.5	2.6
11/8/2021	13.0	5.1	4.4	4.2	5.1	3.7	1.6	3.7	1.8	1.6	1.3	1.2	1.4
11/22/2021	12.0	6.2	3.0	2.3	1.7	1.7	1.6	2.1	1.5	1.3	1.4	1.8	1.9
12/6/2021	3.4	4.6	2.2	2.0	1.7	1.6	1.6	1.8	1.5	1.2	1.4	1.5	1.9
12/20/2021	2.7	1.9	1.5	1.2	1.2	1.3	1.5	1.8	1.3	1.1	1.1	1.5	1.4

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	BTCX-19	BTCX-20	BTCX-21	BTCX-22	BTCX-22A	BTCX-22B	BTCX-23	BTCX-24	BTCX-24A	BTCX-25	BTCX-26	BTCX-27	BTCX-27A
	29.76251	29.75684	29.75333	29.75030	29.74838	29.75125	29.75307	29.75299	29.75378	29.75421	29.75243	29.75142	29.74902
	-95.01853	-95.01982	-95.01757	-95.01257	-95.00778	-95.00775	-95.00667	-95.00370	-95.0027	-95.00079	-94.99692	-94.99136	-94.99198
Date of Retrieval	Benzene Sample Results (ug/m3)												
7/6/2021	1.4	2.4	7.2	9.7	2.7	1.5	1.3	1.7	1.6	1.0	0.9	0.6	0.3
7/19/2021	1.6	1.9	4.8	5.6	3.9	1.0	1.4	1.2	1.4	1.2	0.7	0.4	0.8
8/2/2021	1.9	1.7	3.6	28.0	3.4	2.9	3.5	2.6	2.7	2.5	1.6	1.4	1.4
8/16/2021	1.6	2.0	3.7	13.0	3.0	1.4	1.2	1.4	2.2	1.4	0.9	0.7	0.9
8/30/2021	1.5	1.4	3.3	6.6	3.0	1.2	1.1	1.2	1.1	1.0	0.9	0.7	0.9
9/13/2021	1.6	1.8	2.7	20.0	3.5	1.9	1.8	1.8	1.7	1.6	1.2	1.2	1.2
9/27/2021	2.1	2.2	2.5	5.0	2.4	1.2	1.3	1.1	1.1	1.2	0.9	0.8	0.8
10/11/2021	2.4	2.4	2.7	8.1	5.7	2.1	2.7	2.7	2.1	2.1	1.1	0.6	0.9
10/25/2021	2.8	4.2	4.2	5.0	8.6	3.6	4.4	3.2	3.5	3.4	1.2	0.8	0.8
11/8/2021	1.5	2.4	3.2	3.3	3.4	1.4	1.3	1.4	1.2	1.0	1.0	0.8	0.9
11/22/2021	1.7	2.2	2.9	2.5	3.4	2.2	1.7	2.3	1.9	2.0	1.0	0.7	0.8
12/6/2021	1.7	2.1	3.1	3.2	2.5	1.7	1.7	1.9	2.4	3.8	1.0	0.7	1.1
12/20/2021	1.6	1.8	2.0	2.0	2.0	1.2	1.2	1.6	1.7	1.8	0.9	0.6	0.7

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	BTCX-28	BTCX-28A	BTCX-29	BTCX-29A	BTCX-30	BTCX-31	BTCX-31A	BTCX-32	BTCX-33	BTCX-34	BTCX-35	BTCX-36	BTCX-37	BTCX-38	
	29.74708	29.74441	29.74175	29.74033	29.73731	29.73318	29.7342	29.73339	29.73069	29.72654	29.72290	29.71694	29.71178	29.70675	
	-94.98970	-94.99190	-94.99376	-94.99481	-94.99666	-94.99928	-95.00400	-95.00724	-95.00908	-95.01043	-95.00856	-95.00904	-95.00906	-95.00709	
Date of Retrieval	Benzene Sample Results (ug/m3)														Bi-weekly Annual Average Δc (ug/m3)
7/6/2021	0.5	0.6	0.5	0.6	0.5	0.5	0.6	0.6	0.7	0.7	0.5	0.5	0.4	0.4	5.6
7/19/2021	0.4	0.5	0.4	0.6	0.5	0.4	0.6	0.5	0.5	0.5	0.3	0.3	0.4	0.4	5.7
8/2/2021	1.1	1.2	1.3	1.8	1.0	1.0	1.3	1.6	1.4	1.2	1.0	1.0	1.0	1.0	6.5
8/16/2021	0.6	0.8	0.7	0.8	0.7	0.7	0.9	1.0	1.0	0.9	0.8	0.7	0.7	0.6	6.9
8/30/2021	0.5	0.8	0.6	0.6	0.6	0.6	0.9	1.1	1.0	0.8	0.6	0.6	0.6	0.5	6.9
9/13/2021	1.0	1.2	1.3	1.5	1.2	1.2	1.6	1.9	1.6	1.3	1.3	1.1	0.9	0.9	7.5
9/27/2021	0.7	1.2	0.9	1.0	1.1	1.0	1.6	1.8	1.6	2.0	1.2	1.1	0.9	0.8	7.4
10/11/2021	0.7	1.0	0.9	1.2	1.0	2.4	4.5	1.6	1.6	1.5	1.1	1.1	1.0	0.9	7.5
10/25/2021	0.6	0.9	0.7	0.9	1.1	0.9	0.6	1.2	1.2	1.1	0.9	0.8	0.8	0.7	7.7
11/8/2021	1.0	1.8	1.9	1.8	1.6	1.8	2.0	2.4	3.1	3.1	1.5	1.2	0.9	0.9	8.1
11/22/2021	0.6	1.0	0.7	0.8	1.1	1.0	1.2	1.3	1.1	1.1	0.9	0.8	0.8	0.7	8.4
12/6/2021	1.0	1.3	1.0	1.0	1.2	1.2	1.4	1.4	1.1	1.2	1.1	1.0	0.9	0.7	8.5
12/20/2021	0.6	0.9	0.7	0.8	1.3	0.8	1.1	0.9	0.7	0.7	0.9	0.8	0.7	0.6	8.4